

| BORING 492 - 1 |                   |          |  |
|----------------|-------------------|----------|--|
| Elev           | Field             | SP       | Soil description and drilling remarks  |
| 774'           | soil              | bl. no   |  |
| depth          | class             | per 5'   |  |
|                | CL                | To soil  | CLAY, black, marly, silty, very expansive, loose, very moist<br>Residual soil from underlying Mission Valley Formation   |
|                | ML                |          | SANDY SILT, tan, mottled with white marl, very clayey, sandy   |
| 5              | SC                |          |  |
|                | Mission Valley Fm |          | SANDY SILTSTONE, tan to mottled, deeply weathered, very clayey, firm, dense  |
| 10             | 7/7               |          | SANDY SILTSTONE as above, but darker brown and has a heavier clay matrix<br>SPT driven from 11 to 12 feet  |
| 15             | SM                |          | SANDSTONE, light gray, very fine to fine, silty, very moist  |
| 20             | SM & SP           |          | SANDSTONE, light gray, well indurated, hard, calcareous, few tan clayey lenses<br>as above, very hard to drill   |
| 25             | SC                |          | Use core bucket to drill between 24 and 31 feet. recover 18" cores of very hard calc sandstone<br>SANDSTONE, light gray, very well indurated, calcareous, fine to medium grained, grades to bluish in places, fairly well sorted<br>A four inch layer of very plastic clay - fracture infill |
| 30             | SM                |          | Move drilling site 73' downslope and 6 feet lower in elevation and start drilling with rotary mud then start logging at a similar elevation.   |
|                | 51/161/12         |          | SPT driven from 31 to 32.5 feet  |
|                | CH & CL           |          | CLAYSTONE, olive brown, massive, well indurated, sandy, dry, looks like caulk  |
| 35             |                   |          |  |
|                | 36/70             |          | SPT driven from 36 to 37 feet  |
| 40             |                   |          | CLAYSTONE, dark olive green, w/ white blebs, very sandy, dry, indurated, massive   |
|                | 32/51/70          |          | SPT driven from 41 to 42.5 feet  |
| 45             | ML                |          |  |
|                | SM                | 30/53/70 | SILTY SANDSTONE, very fine, dense, friable, massive, micaceous, calcareous, dry<br>SPT driven from 46 to 47.5 feet<br>Finishing down   |
|                |                   |          | and a purplish hue, very sandy, friable, dry   |

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| 55   |          |  |
|  | SP       | SANDSTONE, greenish gray, medium grained, minor fine, slightly silty, micaceous, |
|  | 33/46/30 | calcareous -- Fining with depth  |
|  |          | SPT driven from 57 to 58.5 feet  |
|  |          |  |
| 60   |          | Top of Stadium Conglomerate  |
|  | refusal  | Conglomerate, variegated metavolcanic cobbles, very silty and clayey             |
|  |          | SPT could not be driven into cobbles   |
|  | Stadium  |  |
|  | Congl    |  |
| 65   |          | Total depth to 65 feet 4/15/92   |
| Boring location is 160 feet right of station 208+26.5 on SR 125 centerline |          |  |
| 11-SD-125 PM 20.0 / 22.4 EA 010721   |          |  |
| BORING LOG 492-1   |          |  |

| BORING 492 - 3 |               |              |  |
|----------------|---------------|--------------|--|
| Elev<br>784'   | Field<br>soil | SPT<br>blows | Rotary mud drilling 2 7/8" - sampling w/140# dropped 30" & 1.4" sampler. California sampler where noted  |
| Depth          | class         | per 6"       | Soil description and drilling remarks  |
|                | CH            | Topsoil      | SANDY CLAY, brown - dark olive green very plastic when wetted, loose, very moist   |
|                | &             |              | Residual soil developed from underlying Mission Valley Formation   |
|                | CL            | Mission      |  |
|                |               | Valley       |  |
| 5              |               | Fm           |  |
|                | ML            | push         | CLAYEY SILT to SILTY CLAY, dark yelo brown, very soft  |
|                | CL            | 18"          | Calif sampler push 18" from 5 to 6.5 feet  |
|                |               |              |  |
| 10             | SP            |              | SANDSTONE, yelo gray, very fine, clayey, silty, dense  |
|                | SM            | 45/45/80     | California sampler from 10 to 11.25  |
|                |               |              | SANDSTONE, yelo gray, fine, some medium, silty, dense to v/ dense slightly indurated   |
|                |               |              |  |
| 15             |               |              |  |
|                | SW            | 18/32/34     | SANDSTONE, yelo gray, fine to medium, friable, micaceous, massive, dense to v/dense  |
|                |               |              | SPT from 15 to 16.5 feet with 1.4" soil sampler  |
|                |               |              |  |
| 20             |               |              |  |
|                | SP            | 34/70        | SANDSTONE, grayish white, very fine to fine, very dense  |
|                |               |              | SPT from 20 to 21 feet with 1.4" soil sampler  |
|                |               |              |  |
| 25             | SP            |              | SANDSTONE, grayish orange -pink, very fine, very dense   |
|                | SC            | 39/70        | SANDSTONE, grayish brown, micaceous, clayey, silty, very fine to fine, very dense, friable, laminated  |
|                |               |              | SPT from 25 to 26 feet with 1.4" sampler   |
|                |               |              |  |
| 30             | CL            |              | CLAYSTONE, brownish, medium to dark olive green, indurated, hard, sandy <(10%), massive, possible laminae(?) non- fissile, no reaction with HCL, white blebs, silty, + dilatency - moderate plastic when wet, , very brittle when rolled to 1/8" thread low to medium dry strength |
|                |               | 100+         | SPT attempted at 30 feet drove 3" with 100 blows   |
| 35             |               |              |  |
|                |               | 70+          | SPT attempted at 35 feet drove 3" with 70 blows  |
|                |               |              |  |
| 40             |               |              | Abrupt contact   |
|                | SP            | 24/38/46     | SANDSTONE, pink yelo light gray, well sorted, angular - subround, massive, very dense  |
|                |               | 66/120/30    | SPT from 40 to 41.5 feet with 1.4 sampler and California sampler from 41.5 to 43 feet  |
|                |               |              |  |
|                |               |              | Fining down  |
| 45             |               |              |  |
|                |               |              | Becomes very silty   |
|                |               |              | pebbly zone  |
|                | ML            |              | SILTSTONE, pinkish, very greasy touch  |
| 50             |               |              |  |
|                | refusal       |              | Too hard to sample with 1.4" SPT soil sampler.   |

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|    |         |   |
| 55 |         | SPT from 55 to 56 feet with 1.4" soil sampler   |
|    | 39/70+  | SANDSTONE, gray pink, medium, subround, very micaceous, coarsening down, very dense                 |
|    |         |   |
|    | Stadium | CONGLOMERATE, reddish gray, with varicolored metavolcanic & quartzite pebbles &                     |
| 60 | Congl   | cobbles. Fragments surface as angular rock chips, mixed with coarse sand in a, silt and clay matrix |
|    |         | Conglomerate as above   |
|    |         | Cored 3 feet with 2 7/8 inch diamond core bit   |
|    |         |   |
| 65 |         | Total depth to 64 feet 4/17/92  |
|    |         | Boring location is 100 feet right of station 213+82 on SR 125 centerline                            |
|    |         | 11- SD- 125 PM 20.0 / 22.4 EA 010721  |
|    |         |   |
|    |         | BORING LOG 492-3  |

| BORING 492 - 5 |       |           |   |
|----------------|-------|-----------|---|
| Elev           | Field | Geologic  | 24" bucket super & bag samples  |
| 784'           | soil  |           |   |
| depth          | class | formation | Soil description and drilling remarks                                     |
|                | SH    | Mission   | Boring at base of deep roadcut  |
|                |       | Valley    | SANDSTONE, light gray, very hard, very dense, fine to medium, calcareous, |
|                |       | Fm        | well indurated, calcareously cemented                                     |
|                |       |           | Too difficult to drill  |
| 5              |       |           | Coring bucket cannot cut it      Terminate drilling                       |
|                |       |           | Total depth to 4 feet      4/22/92  |
|                |       |           | Boring location is 230 feet left of station 219+77 on SR 125 centerline   |
|                |       |           | 11- SD- 125    PM   20.0 / 22.4      EA 010721                            |
|                |       |           | BORING LOG 492-5  |

| 778'   | soil          | Fm &    | Rotary mud sampling with 3" pitcher barrel  |
|--|---------------|---------|---|
| Depth  | class         | Sample  | Soil description and drilling remarks   |
|  | SM            | Mission |   |
|  |               | Valley  | SANDSTONE, white gray fine grained well consolidated , very dense   |
|  |               | Fm      |   |
| 5  |               |         |   |
| 10   |               |         |   |
|  | CL<br>&<br>SC |         | CLAYSTONE, dark brown, silty ,sandy, very firm to hard, stringers of clayey sandstone   |
| 15   |               |         |   |
|  | CL            |         | Cut two feet with pitcher barrel - recovered 4 inches   |
| 20   |               |         | CLAYSTONE, dark brown very stiff to hard,   |
|  |               |         | Cut two and a half feet - recovered 2' 6"   |
| 25   |               |         |   |
|  | SM            |         | SANDSTONE, light gray, very dense, calcareous, fine to medium, with few interbeds of claystone which is dark brown, very stiff to very hard |
| 30   |               |         |   |
|  | CL            |         | CLAYSTONE, red, hard, silty   |
| 35   | SM            |         | Cut 1.5 feet recovered 1.2 feet   |
|  |               |         | SANDSTONE, gray, very dense, very fine to fine grained , well cemented  |
| 40   |               |         |   |
|  |               |         |   |
| 45   |               |         |   |
|  | Stadium       |         | CONGLOMERATE, varicolored pebbles and cobbles of metavolcanics origin, v/dense  |
|  | Cong          |         | Too hard to drill with tricone change to drag bit but it is still very difficult to drill   |
|  |               |         | CONGLOMERATE as above, well cemented , very dense   |
| 50   |               |         | Total depth to 50 feet 5/19/92  |
| Boring location is 134 feet right of station 222+24 on SR 125 centerline |               |         |   |
| 11- SD-125 PM 20.0 / 22.4 EA 010721                                      |               |         |   |
| BORING LOG 592-18  |               |         |   |

| BORING 492 - 8   |       |           |   |
|--|-------|-----------|---|
| Elev   | Field | Geologic  | 18" bucket auger bagging samples of lithologic changes and driving 2" modified California samples |
| 769'   | soil  | Formation | Soil description and drilling remarks   |
| Depth  | class | & sample  |   |
|  | SV    |           | SANDSTONE, white gray, fine grained, moderately dense, to very dense                              |
|  |       | Mission   |   |
|  |       | Valley    |   |
|  |       | Fm        |   |
| 5  |       |           |   |
|  |       |           |   |
| 10   | CL    |           | CLAYSTONE, dark brown, silty, very stiff, damp  |
|  |       |           |   |
| 15   |       |           | Thin lense of clayey sandstone  |
|  |       |           |   |
| 20   |       |           | CLAYSTONE, dark brown, very stiff, damp   |
|  |       |           |   |
| 25   | SP    |           | SANDSTONE, light gray, very hard and dense, fine to medium, subround, damp                        |
|  |       |           | Attempted sample at 25 feet but rock is too hard.   |
|  |       |           |   |
| 30   |       |           |   |
|  |       |           |   |
|  |       | Mission   |   |
|  |       | Valley    |   |
|  |       | Fm        | Trace of water  |
| 35   | SW    |           | SANDSTONE, dark gray, pebbly, too hard to drill with bucket auger                                 |
|  |       |           |   |
| Total depth to 37 feet 4/21/92   |       |           |   |
| Boring location is 143 feet right of station 222+30 on SR 125 centerline |       |           |   |
| 11- SD- 125 PM 20.0 / 22.4 EA 010721                                     |       |           |   |
| BORING LOG 492-8   |       |           |   |

| BORING 492 - 9  |       |           |   |
|---|-------|-----------|---|
| Elev  | Soil  | Geology   | 18" bucket auger retrieved 30 bag samples   |
| 714'  | soil  | Formation | Soil description and drilling remarks   |
| depth   | class | Formation | Soil description and drilling remarks   |
|   |       | Stadium   |   |
|   |       | Congl     | CONGLOMERATE, dark brown, cobbles to 5", abundance of sand and clay in matrix<br>cobbles comprised of meta volcanics and quartzite in a variety of colors, very dense |
| 5   |       |           |   |
|   |       |           | CONGLOMERATE as above with localized lenses of clayey sand, light brown   |
| 10  |       |           |   |
|   |       |           | Cobbles to 12 inches  |
| 15  |       |           | As above with 10 % of cobbles between 3 and 14 inches in size   |
|   |       |           | Obtained 30 sacks of this conglomerate from boring for laboratory tests in Sacramento   |
| 20  |       | Stadium   |   |
|   |       | Congl     | CONGLOMERATE as above but predominately orange rusty color  |
| 25  |       |           |   |
|   |       |           | CONGLOMERATE, light gray, poorly sorted, v/dense, v/ sandy, 8' cobbles common   |
|   |       |           | Trace of green bentonitic clay  |
|   |       |           | Too many large cobbles in conglomerate. Bucket auger is slow and ineffective.   |
| 30  |       |           | Total depth to 30 feet 4/15/92  |
| Boring location is 90 feet right of station 229+90 on SR 125 centerline |       |           |   |
| 11- SD- 125 PM 20.0 / 22.4 EA 010721                                    |       |           |   |
| BORING LOG 492-9  |       |           |   |



| 1192 - 3 |         |        | Rotary mud drill - drilling 4.5" hole sampling with 140 lbs weight & 30" drop on 1.4" sample barrel  |
|----------|---------|--------|--|
| 737      | soil    | blows  | Soil description and drilling remarks  |
| depth    | class   | per 6" |  |
|          |         |        | STADIUM CONGLOMERATE producing variegated angular chips of volcanic rock heavy amount of silty clay with a reddish brown color, very sandy, very dense   |
|          | Stadium |        |  |
|          | Congl.  |        |  |
| 5        |         |        |  |
| 10       |         |        |  |
| 15       |         |        | CONGLOMERATE as above  |
| 20       |         |        |  |
| 25       |         |        | Heavy amount of clayey sand, reddish brown   |
| 30       |         |        |  |
| 35       |         |        | CONGLOMERATE, as above variegated rock chips with heavy amount of sand, v/dense some clay matrix, light brown, pliable, silty  |
| 40       |         |        |  |
| 45       | SC      |        | CONGLOMERATE as above abundance of purple rock chips   |
|          |         |        | SANDSTONE, light gray brown, very dense, fine to coarse, heavy clay matrix,  |
| 50       |         |        | CONGLOMERATE, very dense, producing variegated angular chips of volcanic rock abundance of carmel colored glassy chips but a heavy amount of silty clay with a reddish brown color, very sandy |
|          |         |        | Difficult drilling   |

|     |         |  |
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| 55  |         |  |
|     | 3C      | CLAYEY SANDSTONE, white and light brown clay matrix, very dense  |
|     | ML      | SILTSTONE, white, w/ clayey to sandy, very well consolidated, very dense, well cemented  |
| 60  | SM      |  |
|     | NOTE    | 1.4" sampler driven 3" with 130 blows & 2" sampler for 4" in 99 blows - no returns   |
|     |         | Pebbly sediments and conglomeritic lenses  |
|     |         | CONGLOMERATE, gray brown overall cast, very dense, produces angular variegated chips, very clayey, sandy matrix and sandstone lenses                         |
| 65  |         |  |
|     |         |  |
| 70  |         |  |
|     |         |  |
|     |         |  |
| 75  |         |  |
|     |         | CONGLOMERATE as above  |
| 80  |         |  |
|     | Stadium |  |
|     | Cong.   |  |
| 85  |         |  |
|     | SC      | SANDSTONE, gray brown, very dense, fine to medium, good sorting, friable, rotten, some grains turns to clay easily   |
| 90  |         |  |
|     |         | CONGLOMERATE, gray brown cast, v/dense, produced from sandy clay matrix but pebbles & cobbles produce many vari-colored, hard angular rock chips, very sandy |
|     |         | Hard, slow drilling  |
| 95  |         | End drilling 11/19/92  |
|     |         |  |
| 100 |         |  |
|     |         |  |
|     |         |  |
| 105 | SC      | SANDSTONE, tan, fine to medium, very dense   |
|     |         | CONGLOMERATE, as above, cobbly   |
|     |         |  |

|   |    |   |
|---|----|---|
| 110   |    |   |
|   |    | CONGLOMERATE, varicolored, sand matrix, scattered lenses of clayey sand           |
| 115   |    |   |
|   |    |   |
| 120   |    |   |
|   | SC | Change is believed to be top of sand section of the Friars Formation              |
|   | Fm | FRIARS SANDSTONE, tan, fine to medium,  |
| 125   |    | Sand grains grade into mostly fine  |
|   |    |   |
| 130   |    |   |
|   |    |   |
| 135   |    |   |
|   |    |   |
| 140   |    | SANDSTONE, tan to olive tan, very fine to fine grained, many multi-colored grains |
|   |    | End drilling for the day @ 140 ft on 11/23/92                                     |
|   |    |   |
| 145   |    | SANDSTONE, tan, fine to medium with scattered pebbles and gravel lenses           |
|   |    |   |
| 150   |    | CLAYEY SANDSTONE, olive green,  |
|   |    | SANDSTONE, dark brown to tan with varicolored grains and scattered cobble lenses  |
| 155   |    | CONGLOMERATE, pebbles and cobbles in a sand matrix                                |
|   |    |   |
| 160   |    |   |
| Total depth to 160 feet   |    | 11/24/92  |
| Boring location is 320 feet left of station 245+38 on SR 125 centerline |    |   |
| 11 SD 125 pm 20.0 / 22.4  |    | EA 010721   |
| BORING LOG 1192 - 3   |    |   |

| BORING 1192 - 2 |         |        |  |
|-----------------|---------|--------|--|
| elev            | field   | SPT    | Rotary mud drill - drilling 4.5" hole sampling with 140# weight & 30" drop on 1.4" sample barrel.<br>Soil description and drilling remarks |
| 696'            | soil    | Blows  |  |
| depth           | class   | per 6" |  |
|                 |         |        | STADIUM CONGLOMERATE, red brown oxidized coating on multi-colored cobble and pebble chips, heavy amount of coarse sand.                    |
|                 |         |        |  |
|                 | Stadium |        |  |
|                 | Congl.  |        |  |
| 5               |         |        |  |
|                 |         |        | Hard drilling probably on a cobble concentration   |
|                 |         |        |  |
| 10              |         |        | CONGLOMERATE as above but mostly green brown rock fragments  |
|                 |         |        |  |
|                 |         |        |  |
| 15              |         |        |  |
|                 | SM      |        | SANDSTONE, red brown, dense, well sorted, medium grains  |
|                 | GM      |        | CONGLOMERATE, greenish gry brown, very sandy and very clayey   |
|                 |         |        |  |
| 20              |         |        |  |
|                 | SC      |        | CLAYEY SANDSTONE, light brown to tan, very fine to silty, v/dense, poorly indurated  |
|                 |         |        |  |
| 25              |         |        |  |
|                 | SC      |        | CLAYEY SANDSTONE, gray, heavy amount of sticky clay, dense to v/ dense, fine grained   |
| 30              |         |        |  |
|                 |         |        | CONGLOMERATE, as above   |
|                 | SC      |        | CLAYEY SANDSTONE, light gray, fine, silty heavy amount of sticky clay  |
| 35              |         |        |  |
|                 | GM      |        | CONGLOMERATE, gray from silty sand matrix, with multicolored rock chips from broken cobbles and pebbles                                    |
|                 |         |        |  |
| 40              |         |        |  |
|                 | SM      |        | SANDSTONE, vari-colored, poorly sorted grains, very dense  |
|                 |         |        |  |
| 45              |         |        |  |
|                 | GM      |        | CONGLOMERATE, gray, vari-colored angular chips from broken cobbles, very sandy   |
|                 |         |        |  |
| 50              |         |        |  |

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|-----|-----------|--|
|     |           | Hard drilling probably a heavy concentration of large cobbles                                      |
| 55  |           |  |
|     |           | CONGLOMERATE as above with heavy sand matrix   |
|     | Stadium   |  |
| 60  | Cong      |  |
|     | SC        | Change is believed to be top of sand section of the Frairs Formation.                              |
|     | Friars Fm | SANDSTONE, red brown, from oxidation fine to medium, very dense, very clayey poorly consolidated   |
| 65  |           |  |
|     |           |  |
| 70  |           | SPT driven from 70 to 71 feet  |
|     | 58/160    | CLAYEY SANDSTONE, golden some gray, very dense, fine to medium, silty, v/ clayey poorly cemented   |
|     | CL        | CLAYSTONE, white, dissolves into the drilling mud readily  |
| 75  | SC        | CLAYEY SANDSTONE, light gray, v/ dense, very silty, v/ fine to fine, poorly cemented               |
|     | SM        |  |
| 80  |           | SPT driven from 80 to 81 feet  |
|     | 57/165    | SILTY SANDSTONE, light gray, fine to medium, fair sorting, friable, very dense Trace of white clay |
| 85  |           |  |
|     |           |  |
| 90  |           | SPT driven from 90 to 91 feet  |
|     | 95/216    | SANDSTONE, light gray, medium, some fine, very dense but v/poorly cemented, friable                |
| 95  |           |  |
|     |           |  |
| 100 | SM        | SPT driven from 100 to 101 feet  |
|     | 61/195    | SANDSTONE, light gray, very dense, medium w/ fair sorting, slightly clayey, very friable           |
| 105 |           |  |

|   |    |   |
|---|----|---|
|   |    |   |
|   |    |   |
|   |    |   |
| 110   | SM | 75/150 SANDSTONE, light gray, very dense, medium, grained, fair sorting, friable<br>SPT driven from 110 to 111 feet   |
|   |    |   |
| 115   |    | Clayey with few scattered pebble  |
|   |    |   |
|   |    |   |
| 120   |    | 160/280 SANDSTONE, light gray, very dense, very fine to medium, silty to clayey, very friable<br>SPT driven from 120 to 121 feet  |
|   |    |   |
| 125   |    | CONGLOMERATE, variegated rock chips, very clayey and sandy, very dense  |
|   |    |   |
| 130   | SM | 160/600 SANDSTONE, light gray to light brown, with orange limonitic laminations, very dense,<br>very fine to fine, with trace of pebbles, very friable but densely compact<br>SPT driven from 130 to 131 feet |
|   |    |   |
| 135   | SC | SANDSTONE, light gray brown, very dense, very fine to fine, fair sorting  |
|   |    |   |
| 140   |    |   |
| Total depth 140 feet 11/18/92   |    |   |
| Boring location is 150 feet left of station 246+75 on SR 125 centerline |    |   |
| 11 SD 125 pm 20.0 / 22.4 EA 010721                                      |    |   |
| BORING LOG 1192-2   |    |   |

| BORING 1292 -4 |               |             |  |
|----------------|---------------|-------------|--|
| Elev           | Soil          | Geologic    | Soil description and drilling remarks  |
| 572'           | soil          | Correlation |  |
| depth          | class         | Formation   |  |
|                |               |             | SLOPE WASH   |
|                |               |             | CLAYEY SANDSTONE, gray brown, moderately dense,  |
|                |               | Friars      |  |
|                |               | Fm          |  |
| 5              | SW<br>&<br>OC |             | CONGLOMERATIC SANDSTONE, extremely clayey, gray brown, many pebbles and cobbles, dense, moist to very moist                                    |
| 10             |               |             |  |
|                | SW            |             | CLAYEY CONGLOMERATIC SANDSTONE, as above but red basal contact is crude has a soft, very moist clay layer below contact                        |
| 15             | ML            |             | SILTY CLAYSTONE, dark brown, a large lenticular body, locally a siltstone very stiff moist and non plastic, curved lenticularly shaped contact |
|                |               |             |  |
|                |               |             | SANDY CONGLOMERATE, very clayey, dense, moist, cobbles to 4 inches   |
| 20             |               |             |  |
|                | SW            |             | GRAVELLY, CLAYEY SANDSTONE, light gray to yelo brown extremely clayey, but medium dense to dense   |
| 25             | SM<br>&<br>SC |             | SANDSTONE, light gray, fine to medium, dense some silt and clay in matrix contains long, near vertical fractures.                              |
|                |               | Friars      |  |
| 30             |               | Fm          |  |
|                | CL            |             | SILTY CLAYSTONE, dark brown, hard, grades gradionally into underlying sandstone  |
| 35             | SM            |             | SANDSTONE, light gray, very fine to fine, silty, dense to very dense, but friable  |
| 40             |               |             |  |
|                | ML            |             | Rough, horizontal contact<br>CLAYEY SILTSTONE, dark brown, dense to very dense   |
| 45             |               |             |  |

|   |  |       |   |
|---|--|-------|---|
|   |  | Fract |   |
|   |  | Fm    |   |
| 50  |  |       | horizontal contact  |
|   |  |       | SILTY SANDSTONE, yelo brown, to medium gray, slightly clayey, dense to very dense |
|   |  |       |   |
|   |  |       |   |
| 55  |  |       |   |
| Total depth to 55 feet 12/16/92   |  |       |   |
| Boring location is 50 feet right of station 249 +50' on SR 125 centerline |  |       |   |
| 11-SD-125 PM 20.0 / 22.4 EA 010721  |  |       |   |
| BORING LOG 1292-4   |  |       |   |



| BORING 1192 - 1 |            |                  |  |
|-----------------|------------|------------------|--|
| depth           | Soil class | SPT Blows per 6" | Rotary mud drill - drilling 4.5" hole sampling with 140# weight dropped 30" on 1.4" sample barrel<br>Soil description and drilling remarks |
|                 | SC         | Slope-wash       | SLOPE WASH - gravel and cobbles in clayey sand matrix  |
|                 |            |                  | CLAYEY SANDSTONE, gray, medium dense, medium grained, many pebbles   |
| 5               |            | Friars Fm        |  |
|                 |            |                  | CLAYEY CONGLOMERATE, gray, very sandy matrix, with interbeds of sandstone, dense   |
| 10              |            |                  |  |
|                 | SC         |                  | CLAYEY SANDSTONE, gray, dense, fine to coarse, pebbly  |
| 15              |            |                  | CONGLOMERATE, gray, very sandy and clayey, dense   |
|                 | SC         |                  | CLAYEY SANDSTONE, gray, fine to medium, many pebbles   |
|                 |            |                  | CONGLOMERATE, sandy as above   |
| 20              | SC         |                  | SANDSTONE, gray, very clayey to pebbly   |
|                 |            |                  | CONGLOMERATE as above  |
|                 | SC         |                  | CLAYEY SANDSTONE, gray, dense, poorly sorted, round -subround,   |
| 25              | ML         |                  | SILTSTONE, light green brown, with very fine sand, very dense  |
|                 | 55/40      |                  | Mud level measured to this level during and after drilling operation   |
|                 | SC         |                  | SPT driven at 25 to 26 feet  |
|                 | Friars Fm  |                  |  |
|                 |            |                  | SANDSTONE, light green gray, slightly clayey and silty, very fine to fine, very dense  |
| 30              |            |                  |  |
|                 | 45/80/130  |                  | SPT driven at 30 to 31.5 feet  |
|                 |            |                  |  |
|                 |            |                  | LOST CIRCULATION   |
| 35              |            |                  | Drilled the rest of the boring without regaining circulation again   |
|                 |            |                  |  |
| 40              |            |                  | SPT driven from 40 to 41 feet  |
|                 | 40/140     |                  | SANDSTONE, light gray, very dense, mostly medium with abundance of fine poorly cemented with maroon clay lenses.                           |
|                 |            |                  |  |
| 45              |            |                  |  |
|                 |            |                  |  |
|                 | CL         |                  | SILTY CLAYSTONE, gray, hard but plastic when wet, very silty appears sandy   |
| 50              | &          |                  | grades to clayey siltstone   |
|                 | ML         | 55/180           | SPT driven from 50 to 51 feet  |

|   |         |  |
|---|---------|--|
| 55  |         | SANDSTONE, light gray, very dense, medium, poorly cemented , moist                                   |
|   |         | No circulation   |
| 60  |         | SPT driven from 60 to 61 feet  |
|   | 104/288 | SANDSTONE, gray , very dense, fine to medium, well indurated, hard, , moist                          |
|   |         | SPT driven   |
| 65  |         |  |
| 70  |         | SPT driven from 70 to 71 feet  |
|   | 73/215  | SANDSTONE, gray, v/dense, fine to medium , massive, well indurated, small lenses of maroon claystone |
| 75  |         |  |
| 80  |         | SPT driven from 80 to 81 feet  |
|   |         | CLAYEY SILTSTONE, light green gray, very dense   |
|   | 50/160  | Total depth to 81 feet 11/17/92  |
| Boring location is 95 feet right of station 249+50 on SR 125 centerline |         |  |
| 11- SD- 125 PM 20.0 / 22.4 EA 010721                                    |         |  |
| BORING LOG 1192-1   |         |  |

| Depth | Soil class | Formation & altitude | 30" bucket auger - bag sampling lithology changes and downhole visual logging<br>Soil description and drilling remarks   |
|-------|------------|----------------------|--|
|       | SM         | Ful                  | SILTY SAND, yelo gray, loose, with some organic debris intermixed, with chunks of claystone, grades very clayey with depth, dry                                      |
| 5     | SC         |                      |  |
|       | CL         | Friars Fm            | SILTY CLAYSTONE, sandy, dark brown, slightly indurated, interbedded layers of soft friable sandy siltstone, dry with clayey siltstone lenses and rootlets to 6 feet. |
|       |            |                      | As above but very micaceous, very silty and slightly damp  |
| 10    |            |                      | Very large caliche pockets   |
|       | ML         |                      | SILTSTONE, light brown, mottled, micaceous, , very friable, , very sandy, locally very clayey, dry, firm and well indurated  |
| 15    |            |                      |  |
|       | CL         |                      | CLAYSTONE, red brown, well indurated, irregular contact  |
|       | SM         |                      | SANDSTONE, light gray, slightly indurated, moderately well sorted, fine to medium grains scattered lenses of claystone   |
| 20    |            |                      |  |
|       |            |                      | Concentration of pebbles and cobbles in lenticular accumulation, well rounded clasts silt and sand matrix with grains favoring the very coarse size                  |
| 25    |            |                      | Thin interbeds of SILTSTONE, green brown, very firm, well indurated  |
| 30    |            |                      |  |
|       |            |                      |  |
| 35    |            |                      | SILTY SANDSTONE, gray, fine to medium, micaceous, dense, contains thin laminations   |
|       |            |                      |  |
|       | CL         |                      | CLAYSTONE, brown, firm to very firm, horizontally bedded   |
| 40    | SM         |                      | GRAVEL traps, some lens imbricated and claystone ripups to 3 feet  |
|       |            |                      | SILTY SANDSTONE, gray, fine to medium with black micaceous laminations, bedding is horizontally oriented with some low angle cross bedding.                          |
| 45    |            |                      |  |
|       |            |                      |  |
| 50    |            |                      |  |
|       |            |                      |  |
|       | CL         |                      | CLAYSTONE, dark olive, green, contains a few pebbles and cobbles & steep dipping slickensides from contemporaneous deformation Shears dip south 198/35 & 213/33      |
| 55    |            | N72W35S<br>N57W33S   |  |
|       |            |                      | Total Depth 55' Oct. 2, 1992   |
|       |            |                      | Boring is located 192 feet right of station 255 + 75 on SR 125 centerline  |
|       |            |                      | 11 - SD - 125 pm 20.0 / 22.4 EA 010721   |
|       |            |                      | BORING LOG 1092 - 2  |

| BORING 592 - 10   |               |           |   |
|---|---------------|-----------|---|
| Elev  | Field         | Geologic  | 24" bucket auger bagging samples of lithologic changes                            |
| 573'  | soil          | Formation | Soil description and drilling remarks   |
| Depth   | class         | Formation | Soil description and drilling remarks   |
|   |               | Topsoil   | TOPSOIL -CONGLOMERATE, dusky yelo brown, silty, sandy, clayey, loose, highly      |
|   |               | cover     | organic, dry, meta-volcanic cobbles, matrix supported                             |
|   |               | on        | Becomes variegated and moist and cohesive at 3' , plastic, micaceous              |
|   |               | landslide |   |
| 5   |               | debris    | Dark yelo brown, very moist mixture of clay, sand and cobbles                     |
|   | CL            |           | Mostly CLAYSTONE but intermixed with SANDSTONE and CONGLOMERATE                   |
|   |               |           | dark yelo brown, very moist, moderately loose many cobbles and pebbles in clay    |
| 10  |               | Qls       |   |
|   |               |           | Gravelly, sandy, clay   |
| 15  |               |           |   |
|   | SC            |           | CLAYEY SAND, olive brown, moist, medium dense,                                    |
|   |               |           | CLAYEY to COBBLEY SAND, olive yelo, coarse, dry, subangular to subround grains    |
|   |               |           |   |
|   |               |           | PEBBLEY SANDSTONE, reddish dark yelo brown, slightly to moderately indurated      |
| 20  |               |           | appears to have lenses of sandy clay  |
|   |               |           |   |
|   |               |           | Landslide debris  |
| 25  | CL<br>&<br>CH |           | SANDY , SILTY, GRAVELLY CLAY, dark yelo brown, plastic waxy luster, may be        |
|   |               |           | slickensides formed by internal sliding at 24 feet                                |
|   |               |           | Boulders common   |
|   | CL<br>&<br>SP |           |   |
| 30  |               |           | CLAY, Cobbly, pebbly, sandy, silty and clayey SAND ,reddish brown, slightly moist |
|   |               |           | landslide mixture appears like terrace deposits or soil horizon                   |
|   | CL<br>&<br>GC | Qls       | Landslide debris  |
| 35  |               |           | CLAY as above very cobbly   |
|   | GC<br>&<br>CL |           |   |
|   |               |           |   |
| Total depth to 39 feet 5/06/92  |               |           |   |
| Boring location is 200 feet left of station 260+25 on SR 125 centerline |               |           |   |
| 11- SD- 125 PM 20.0 / 22.4 EA 010721                                    |               |           |   |
| BORING LOG 592-10   |               |           |   |

# BOHING 1093 - 2

| Elev. | Field | Geologic   |  |
|-------|-------|------------|--|
| 505'  | soil  | formation  | 30" bucket auger - bag sampling lithologic changes and downhole visual logging   |
| Depth | class | & altitude | Soil description and drilling remarks  |
|       | CL    | FILL       | SILTY CLAYSTONE, topsoil, dark brown with intermixed gray sand, dry, firm to loose   |
| 5     |       |            |  |
|       | CL    | qls        | LANDSLIDE DEBRIS, / CLAYSTONE, dark brown to reddish brown, damp, moderately loose, contains abundance of caliche  |
| 10    |       |            |  |
| 15    |       |            |  |
| 20    |       |            |  |
|       |       |            | Becomes sandy and gradually changes into sandstone   |
| 25    | SC    | qls        | SANDSTONE, pale pink, friable, arkosic, fine to medium, moist slightly clayey  |
| 30    |       |            |  |
| 35    |       |            |  |
|       | CL    |            | CLAYSTONE: dark brown, red brown and dark green, contains many caliche seams and nodules, dense, very firm, Well developed shear dipping about 55 degrees eastward |
| 40    |       |            | Disturbed with short chaotic shears but claystone is hard  |
| 45    | SC    |            | contact continuous around boring<br>SANDSTONE, light gray, well compacted, firm,   |
| 50    | CL    |            | CLAYSTONE, red brown, very silty, sandy, dense, hard, camp, erratic basal contact  |
|       |       | qls        |  |

|                     |        |   |
|---------------------|--------|---|
| 55                  |        | Seepage   |
|                     | ols    |   |
| 60                  | SC     | Basal slide plane believed to be at base of claystone between 59 and 60 feet where<br>Abrupt contact between claystone and sandstone. Soft plastic layer dips 60 degrees NE |
|                     | FRIARS | SANDSTONE, white, medium to fine silty, hard, laminated and crossbedded, friable  |
|                     | FM     | moist,*very micaceous, contains clay ripups   |
| 65                  |        |   |
| 70                  |        |   |
|                     |        | Total depth to 71' 10/19/93   |
|                     |        | Boring is located 260 feet right of station 260 + 30 SR 125 centerline  |
|                     |        | 11 - SD - 125 pm 20.0 / 22.4 EA 010721  |
| BORING LOG 1093 - 2 |        |   |

# BORING 1093 - 1

| Elev. | Field | Geologic   |  |
|-------|-------|------------|--|
| 505'  | soil  | formation  | 30" bucket auger - bag sampling lithologic changes and downhole visual logging   |
| Depth | class | & altitude | Soil description and drilling remarks  |
|       | CL    | FILL       | SANDY CLAYSTONE, dark brown with intermixed gray sand, damp to dry   |
| 5     |       |            |  |
| 10    | SM    | qls        | LANDSLIDE DEBRIS; SANDSTONE, light gray, with numerous caliche healed steep fractures, damp to dry, dense, firm                                |
| 15    |       |            |  |
| 20    |       |            |  |
| 25    | CL    | qls        | SANDY CLAYSTONE, dark reddish brown, trace pebbles, erratic contacts   |
|       | SM    |            | SANDSTONE, light gray, with caliche filled steep fractures, dense, firm  |
|       |       |            | basal contact is bent, broken and chaotic dipping N50E up to 50 degrees  |
|       | CL    |            | CLAYSTONE; dark brown, red brown and dark green, fractures, contains many caliche seams and pods, dense, very firm,                            |
| 30    |       |            |  |
| 35    |       |            |  |
| 40    | SM    |            | SANDSTONE, light gray, well compacted, very firm, the base is wet.   |
| 45    |       |            |  |
| 50    | CL    |            | SANDY GRAVEL, cobbles to 4" wet, v/ clayey, distorted contact dips south 45 degrees  |
|       | SM    | qls        | CLAYSTONE, red brown, dense, firm, erratic basal contact   |
|       |       |            | SANDSTONE, gray, fine to medium, slightly clayey, numerous steep dipping fracture planes drip with water and spall off wall along those planes |

|  |         |  |
|--|---------|--|
| 55   |         |  |
|  | qls     |  |
|  |         | PEBBLY CONGLOMERATE, silty, clayey, fractured, slightly offset,, very wet, seepage pebbles to 2.5", with near vertical fractures, N80E85S  |
| 60   |         | SANDSTONE, white, medium to fine silty, sl/clayey  |
|  | qls     | Numerous vertical fractures in sandstone dripping with water, saturated blocks spall cleanly along fractures. Probably the bottom and backside of landslide  |
|  | FRIARS  | CONGLOMERATE, gray, clayey, pebbles to 1", near flat, encircles hole   |
| 65   | FM      |  |
|  | CI      |  |
| 70   |         | CLAYSTONE, dark gray, red and green, broken into many angular fragments like from desiccation on a highly weathered clay surface. Broken, fragments are recemented. Contact is irregular. At 68, a few erratic dipping fractures planes have slickensides probably from contemporaneous deformation. CLAYSTONE is very hard, very dense dry, caliche and calcareous nodules common |
|  | N50W25S |  |
| 75   | N52W35N | Fractures dip randomly, N50W 25S, N52W 35N, N80E 25S a few slickensides  |
|  | N80E25S |  |
|  |         | CLAYEY SILTSTONE, mostly greenish tan, abundance of sandy material and lenses mottled w/white calcareous nodules, hard, dense appears undisturbed.   |
| 80   |         |  |
|  |         |  |
| 85   |         |  |
|  | SC      | CLAYEY SANDSTONE, white gray, bed dips toward west into hill N50W 30 S   |
| 90   | CL      | CLAYSTONE/MUDSTONE, dark green brown, dirty with silt, sand, caliche and pebbles   |
|  | SC      | SANDSTONE, white gray, dense, firm, medium silty to clayey damp to dry   |
|  | CL      | CLAYSTONE, red brown to dark green, bedded horizontally, very hard, dense, with calcareous nodules   |
| 95   |         | CLAYSTONE, red, red brown, very hard, lenses of clayey sandstone, few random slicks  |
|  | SC      | SANDSTONE, tan, gray, very coarse to clayey, includes some claystone clasts, hard, dense, damp to dry  |
| 100  | CL      | CLAYSTONE, tan to dark brown, appears like weathered surface of a clay bed because claystone clasts have shrunk(desiccated) broken, into countless angular fragment but have stayed in place and recemented. Grades into a multitude of colors with depth. Very dense, very hard, locally very sandy.  |
| 105  |         |  |
| Total depth to 107'                                  |         | 10/18/93   |
| Boring is located 320 feet right of station 260 + 40 |         | SR 125 centerline  |
| 11 - SD - 125 pm 20.0 / 22.4                         |         | EA 010721  |
| BORING LOG 1093 - 1                                  |         |  |



| BORING 492 - 11  |               |           |  |
|--|---------------|-----------|--|
| Elev   | Soil          | Geologic  | 18" bucket auger, bagging samples of lithologic changes  |
| 546'   | soil          |           |  |
| depth  | class         | Formation | Soil description and drilling remarks  |
|  |               |           | COBBLE CONGLOMERATE, dusty yelo brown, sandy clay matrix, quartzite cobbles  |
|  |               | Qls       | Landslide Debris   |
|  |               | Debris    |  |
| 5  | SC<br>&<br>SM |           | CLAYEY SAND, grayish brown, loose to medium dense, v/ clayey, scattered round cobbles, coarsening with depth and decrease in clay  |
|  |               |           | CLAYEY SAND as above uncemented or very friable sandstone fragments increasing clay and scattered cobbles  |
| 10   |               |           |  |
|  | CL            |           | CLAY, orange brown, soft, very plastic sandy clay, scattered quartzite cobbles   |
|  | CH            |           |  |
| 15   | SC<br>&<br>SM |           | SANDSTONE, light brown, clayey to pebbly, very fine to very coarse, probably blocks of sandstone intermixed with blocks of claystone and conglomerate and crushed material as well |
|  | CL<br>&<br>CH |           | CLAYSTONE, gray olive, very plastic, soft to firm, very moist, pebbly trace cobbles,   |
| 20   |               |           |  |
|  |               |           | CLAYSTONE, variegated, very moist, soft to very stiff but mostly firm  |
| 25   |               | Qls       |  |
|  |               | Debris    |  |
|  |               |           | CONGLOMERATE, black gray, very moist, loose to medium dense  |
| 30   |               |           | GRAVEL, comprised of pebbles and cobbles in a clayey sand matrix   |
|  |               |           |  |
|  |               |           | Thin clay layers or lenses & yelo clayey sand with pebbles grade into gray sand at base  |
| 35   | SP            |           |  |
| Total depth to 35 feet 4/17/92   |               |           |  |
| Boring location is 60 feet left of station 260+70 on SR 125 centerline |               |           |  |
| 11- SD- 125 PM 20.0 / 22.4 EA 010721                                   |               |           |  |
| BORING LOG 492-11  |               |           |  |

| BORING 592 - 19  |        |          |  |
|--|--------|----------|--|
| Elev.  | Soil   | SPT      | Rotary mud drilling 4.5" hole sampling with 140 lbs weight dropped 30" on 1.4" sample barrel   |
| 546  | Soil   | Blows    |  |
| Depth  | Class. | per 6"   | Soil description and drilling remarks  |
|  | CL     |          | TOPSOIL - CLAY, black, silty, sandy, soft, expansive, scattered cobbles  |
|  |        | Qls      |  |
|  |        | Debris   | Landslide Debris   |
| 5  | SW     |          | SAND, dark gray, clayey to pebbly, medium dense to dense   |
|  |        | 14/18/16 |  |
| 10   |        |          |  |
|  |        | 7/11     | SAND, reddish brown, silty to pebbly, w/ clayey, few cobbles, loose to medium dense  |
| 15   |        |          |  |
|  |        | 6/7/14   | GRAVELLY SAND, reddish brown, poorly sorted, very silty, very clayey intermixed pebbles and cobbles, medium dense  |
| 20   |        |          |  |
|  |        | 25/36/51 | SANDY CONGLOMERATE, (probably intermixed sandstone and conglomerate blocks mostly brown, poorly sorted many angular, varicolored cobble fragments, w/ lenses clayey sand, dense to v/dense |
| 25   |        |          | CONGLOMERATE, vari colored pebbles fragments in coarse sand in clay matrix   |
|  |        | 13/21/20 |  |
|  |        | Qls      |  |
|  |        | Debris   | Landslide Debris   |
| 30   |        |          |  |
|  |        | 13/30/15 |  |
|  | SC     |          | CLAYEY SANDSTONE, gray, very fine with variegated pebble fragments, dense  |
| 35   |        |          |  |
|  |        | 28/22/36 | CLAYSTONE, in bottom 6" is yellow, hard to v/ stiff, pliable when wet  |
|  | CL     |          |  |
| Drilled to 36.5 feet 5/20/92   |        |          |  |
| Boring location is 49 feet left of station 260+90 on SR 125 centerline |        |          |  |
| 11- SD- 125 PM 20.0 / 22.4 EA 010721                                   |        |          |  |
| BORING LOG 592-19  |        |          |  |

| BORING 492-12  |        |           |  |
|--|--------|-----------|--|
| Elev   | Field  | Geologic  | 18" bucket auger - bagging samples of lithologic changes   |
| 544'   | soil   |           |  |
| depth  | class  | Formation | Soil description and drilling remarks  |
|  | CL     | Topsoil   | CLAY, black, loose very moist,, plastic, slightly, sandy, slightly organic                                     |
|  |        |           |  |
|  |        |           | Landslide debris   |
| 5  | ML     | Qts       | SANDY SILT & SILTY SAND, tan, loose to medium dense, very fine sand grains, moist                              |
|  | Debris |           | Scattered cobbles below 8 feet   |
|  | SC     |           | Too rocky to drive sample barrel   |
|  |        |           |  |
| 10   |        |           |  |
|  | CL     |           | CLAY, SAND, & cobbles heavy clay matrix, bray brown, moist   |
|  | SC     |           | SILTY CLAYEY SAND, with abundance of pebbles and cobbles, red brown, moist                                     |
| 15   |        |           |  |
|  | SC     |           | CLAYEY SAND AND GRAVEL, , very clayey, red brown,  |
|  |        |           | CLAYEY GRAVEL & SAND, very clayey, gray to brown gray, moist, medium dense                                     |
| 20   |        |           | Too rocky to drive sample barrel   |
|  |        |           | Take bag of disturbed sample from 17 to 20 feet and 22 to 25 feet  |
|  |        |           |  |
|  |        |           | Very rocky - 4" size is common   |
| 25   |        |           |  |
|  | SW     |           | GRAVELLY SAND, light gray, , medium dense to dense, moist, becomes very rocky with depth, locally very clayey. |
| 30   |        |           |  |
|  | SP     |           |  |
|  | Qts    |           | Landslide debris   |
|  | Debris |           |  |
| 35   |        |           |  |
| Total depth to 35 feet 4/17/92   |        |           |  |
| Boring location is 90 feet left of station 263+40 on SR 125 centerline |        |           |  |
| 11- SD- 125 PM 20.0 / 22.4 EA 010721                                   |        |           |  |
| BORING LOG 492-12  |        |           |  |

| Elev. | Field | Geologic      | BORING 493 - 1  |
|-------|-------|---------------|---|
| 443'  | soil  | formation     | 30" bucket auger - bag sampling lithologic changes and downhole visual logging  |
| Depth | class | A altitude    | Soil description and drilling remarks   |
|       | SM    | Qls           | SILTY SAND, tan to white, moist, poorly sorted, moderately firm to very friable   |
| 5     |       |               |   |
| 10    |       |               |   |
|       |       | Qls<br>debrts | CONGLOMERATE, gray with sand matrix, gray lenticular clayey gravel moist, mod loose, to mod dense, most pebbles range from 1/2 to 1 inch in size but also contains cobbles to 10"   |
| 15    |       |               |   |
|       | SM    | Qls           | SANDSTONE, gray, fine to very fine, moist, very dense, little to no silt, no clay, contains a one inch layer of fine gravel. Grades down into silty sand that is gray and very dense  |
| 20    | SM    |               | SILTY SAND, gray, fine to medium, very dense but poorly cemented  |
|       |       |               | Contact dips downhill 4 degrees   |
|       |       | Qls           | CONGLOMERATE, variegated pebbles, clay matrix, cobbles to 10", moderately dense   |
| 25    | CH    | N30W18N       | Shear Zone - CLAYSTONE, gray, gouged with many slicks, short shear planes   |
|       | CL    | N50W33N       | The largest shear in zone trends N50W33NE. A slide plane within the major slide   |
|       | CL    | N5W24N        | SILTY CLAYSTONE, olive, mottled white w/caliche pods and veins, also contains black organic rich spots, dense, few shears - one caliche vein @ 27' trends N5W 24NE  |
| 30    |       |               | Grades sandy with depth and less caliche  |
|       | SM    | Qls           | SANDSTONE, white gray, silty, moist, fine/ medium, v/ clayey, disseminated caliche, friable with interbedded thin clay layers   |
|       |       | N30W35N       | At 34' very moist, soft, thin clay layer strikes N30W35NE   |
| 35    | CL    | N30W35N       | CLAY layer between 35.5 & 36.5 heavily sheared strikes N30W35NE, soft, moist  |
|       | SM    |               |   |
| 40    | CH    | Qls<br>debrts | Sheared CLAYSTONE, red, soft, pliable, plastic, brecciated & gouged with 2" green cap<br>Several gouge zones 1/8 to 1/4 inch thick, contain many stacked slickensides, wet, soft, near flat gouge zones - @ 42' heavily sheared red clay dips randomly, heavy seepage<br>Penetrometer registers 1 to 1.25 TSF |
|       | CL    |               |   |
| 45    |       |               | SILTY CLAYST / CLAYEY SILTST, dark green to green gray and black, dry, firm, few random fractures, grades very silty with depth and very well consolidated and hard   |
|       | SM    |               | SANDSTONE, light green, dense, coarse to very coarse, friable to well consolidated, dry   |
| 50    |       |               |   |
|       | CH    | Qls           | CLAYSTONE, red, highly sheared, soft wet, brecciated with large slickenside planes  |
|       |       | 1/1/1         | SPT @ 52 - 1/1/1 Blow counts for six inch penetration using 2300 lbs drop for 30"   |

|   |    |         |   |
|---|----|---------|---|
|   |    | P/2/3   | SPT @ 53.5' push / 2 / 3 Blow counts for six inch penetration using 1300 lbs drop for 30" |
| 55  |    | N35W38E | At 53.5' shear zone dips downslope N35W38NE & hand penetrometer registers 1 TSF           |
|   | CH |         | SILTY CLAYSTONE, light brown mottled green, moist locally wet, massively sheared          |
|   | CL |         | but not as bad as above, many large shears dipping randomly, very stiff between shears    |
|   |    |         |   |
| 60  |    | '3/6/11 | SPT @ 60' - 3 / 6 / 11 Blow counts for six inch penetration using 1300 lbs drop for 30"   |
|   |    |         |   |
|   |    |         | Hand penetrometer test @ 64' measured 1 tsf   |
|   | CH | Qls     | Shear Zone from 63 to 65 ft - CLAYSTONE, green brown, brecciated with shears, soft, wet   |
| 65  |    | plane?  | shears dip randomly except for one large well grooved, well polished - N55W 35 NE         |
|   | SM | FRIARS  | Entire Zone is possibly the basal slide plane but direction is indistinct.                |
|   |    | FM      | SANDSTONE, green gray, moderately dense to dense, wet, poorly sorted, friable             |
|   |    |         |   |
| 70  |    |         |   |
|   | CL |         | CLAYSTONE, red, very hard   |
|   |    |         |   |
| 75  |    |         |   |
|   |    |         |   |
| Total depth to 76'  |    |         | 4/14/93   |
| Boring is located 510 feet right of station 266 + 70 on SR 125 centerline |    |         |   |
| 11 - SD - 125 pm 20.0 / 22.4  |    |         | EA 010721   |
| BORING LOG 493 - 1  |    |         |   |

| Elev. | Field  | Geologic   | BORING   |                               |
|-------|--------|------------|--|-------------------------------|
|       |        |            | 30" bucket auger - bag sampling lithologic   | 2 and downhole visual logging |
| 441'  | soil   | formation  | Soil description and drilling remarks  |                               |
| Depth | class  | & attitude |  |                               |
|       | ML     | Topsoil    | SILTY CLAY, black, very expansive, sandy   |                               |
|       | SC     | Qls        | CLAYEY SAND, white gray, fine, very densely compacted but friable                        |                               |
|       | debris |            | Hand penetrometer test registered 3 tsf  |                               |
| 5     |        |            |  |                               |
|       |        |            | SANDY, GRAVELLY CLAY, dark brown, probably an old poorly developed topsoil               |                               |
|       |        |            | Hand penetrometer test registered 1 tsf  |                               |
|       | CL     |            | CLAY, gray, slightly moist, very stiff   |                               |
| 10    |        |            | Hand penetrometer test registers from 3.0 to 3.5 tsf                                     |                               |
|       |        |            | SANDY CLAY, red brown, pebbly  |                               |
|       | ML     |            | CLAYEY SILT / SILTY CLAY, gray brown with abundance of caliche, very soft and wet        |                               |
|       | CL     |            | locally but very stiff overall   |                               |
|       |        |            | CONGLOMERATE, gray with heavy clay matrix, very sandy, dense firm                        |                               |
| 15    |        |            |  |                               |
|       |        | N20W10N    | Bottom contact with claystone trends N20W10NE  |                               |
|       | CL     |            | CLAYSTONE, gray heavily impregated w/ caliche. punky but firm,                           |                               |
|       | Qls    |            | Hand penetrometer test registered 3.5 tsf  |                               |
| 20    | debris |            |  |                               |
|       |        |            | CLAYSTONE as above but contains much more caliche  |                               |
|       | SC     |            | SANDSTONE, green, coarse, w/clay matrix, dense, with tight fractures & slight seepage    |                               |
|       | CL     |            | SILTY CLAYSTONE & CLAYEY SILTSTONE, dark green gray, dense, heavily fractured            |                               |
| 25    |        |            | very moist, crushes easily has steep open fractures seeping water, large caliche patches |                               |
|       | ML     |            | CLAYEY SILTSTONE, green gray, very stiff, fractures contain no slickensides              |                               |
|       |        |            |  |                               |
|       | CL     |            | Brecciated SILTY CLAYSTONE, red brown, heavy seepage from the fractures,                 |                               |
| 30    |        |            | Shear planes dip randomly, many long prominent shears & fractures become shorter         |                               |
|       | ML     |            | and less impressive below 30' where slickensides are fewer or absent.                    |                               |
|       | CL     |            | CLAYEY SILTSTONE & SILTY CLAYSTONE, intermixed red brown, moderately stiff, dry          |                               |
|       |        | N45W22N    | Long polished shear plane at 33' trends N45W22NE   |                               |
|       |        |            |  |                               |
| 35    | Qls    |            |  |                               |
|       | Debris |            |  |                               |
|       | CL     | N40W40N    | CLAYSTONE, red brown, brecciated zone between 36 and 38 feet. Many shears and slicks     |                               |
|       |        | N50W38N    | Zone dips downslope - general trend is N50W38NE and longest shear trends N40W40NW        |                               |
|       |        |            | SILTY CLAYSTONE, lt green gray, moist, many shears. Shear zone dips N70W18NE             |                               |
| 40    |        | N70W18N    |  |                               |
|       | SM     |            | SANDSTONE, gray green, medium to v/coarse, friable, but densely compact                  |                               |
|       |        |            |  |                               |
| 45    |        |            | Contact is sharp, it dips into the slope at N70E19NW                                     |                               |
|       | CL     | N70E19N    | CLAYSTONE, maroon, heavily sheared small, short chips & blocks that dip randomly         |                               |
|       | Qls    |            | color grades down from dark red and dark green near top into the maroon, dry,            |                               |
|       | debris |            | Heaviest shearing and sloughing in this lower clayey section is between 48 and 50 ft.    |                               |
|       |        |            | This is probably the basal disturbed zone in the landslide.                              |                               |
| 50    |        |            |  |                               |
|       | CL     | EW55N      | CLAYSTONE, red & green, highly sheared with v/steep shearing planes @ 50' EW55N          |                               |
|       | ML     |            | SILTY CLAYSTONE, gray, many slicks dipping randomly.                                     |                               |
|       | Friars |            |  |                               |

|   |    |      |  |
|---|----|------|--|
|   |    | From | Many hard calcareous nodules between 50' and 54' - grades gradually into firmer rock   |
| 55  |    |      |  |
|   |    |      | Below 54' shears are small, fewer, and claystone is more competent being hard & firmer |
|   | ML |      | grades into dark red to dark green CLAYEY SILTSTONE v/ hard, locally sandy to clayey   |
|   |    |      | few fractures, no shears.  |
|   |    |      |  |
| 60  |    |      |  |
|   |    |      |  |
|   | SM |      | SANDSTONE, light green, fine to coarse, moist, well cemented, densely compacted,       |
|   |    |      | massive, no fractures  |
|   | ML |      | CLAYEY SILTSTONE, dark red brown & dark gray green, very clayey, hard, no fractures    |
| 65  |    |      |  |
|   |    |      |  |
|   |    |      |  |
|   | SM |      | SANDSTONE, gray to green gray, very moist to almost wet, well sorted, well compacted   |
|   |    |      | very poorly cemented, abundance of coarse grains                                       |
| 70  |    |      |  |
| Total depth to 70' 4/14/93  |    |      |  |
| Boring is located 490 feet right of station 269 + 70 on SR 125 centerline |    |      |  |
| 11 - SD - 125 pm 20.0 / 22.4 EA 010721                                    |    |      |  |
| BORING LOG 493 - 2  |    |      |  |